

CLAIMS

What is claimed is:

1. A method for transmitting media packets, comprising:
5 receiving media packets in a first order; and
transmitting said media packets in a second order, wherein said
second order is selected according to loss characteristics of a downstream
channel, and wherein said second order results in reduced distortion with
respect to a predicted distortion from said first order.
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2. The method of Claim 1 wherein media packet losses resulting
from said second order is in a pattern of isolated losses.
3. The method of Claim 1 further comprising storing said media
15 packets in said first order prior to said transmitting.
4. The method of Claim 1 further comprising determining said
second order by a schedule adapter.
- 20 5. The system as described in Claim 4 wherein said schedule
adapter is an interleaver.
6. The system as described in Claim 4 wherein said schedule
adapter is a packet scheduler, said packet scheduler being computer-
25 readable code, said code programmable to perform as an interleaver.

7. The method of Claim 4 further comprising selecting said schedule adapter from a plurality of selectable schedule adapters.

5 8. The method of Claim 7 further comprising:
predicting for each of said plurality of selectable schedule adapters a corresponding amount of distortion; and
selecting one of said plurality of selectable schedule adapters according to said predicted distortion.

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9. The method of Claim 1 further comprising estimating said loss characteristics from channel characteristics data received from a downstream device.

15 10. The method of Claim 9 wherein said downstream device sends, in real-time, said channel characteristics data corresponding to each packet received, back to a sender system.

11. The method of Claim 9 wherein said downstream device
20 accumulates said channel characteristics data for sending at a predetermined interval.

12. The method of Claim 9 wherein said loss characteristics are selected from a group consisting essentially of:

25 time between losses;

number of isolated packet losses;
number of sequential packet losses;
end-to-end delay for each packet;
number of said media packets lost in each of said sequential
5 packet losses;
packets received/lost pattern; and
time of receipt of each packet.

13. The method of Claim 12 further comprising predicting distortion
10 produced from various of said loss characteristics in combination with
various schedule adapter configurations and storing said predicted distortion
results as basis for future selecting of said second order for minimizing said
distortion.

15 14. The method of Claim 1 wherein said selecting said second
order is by an interleaver selector.

15. The method of Claim 1 wherein said selecting said second
order is by a switch and wherein said switch transmits said media packets
20 alternately among a plurality of downstream channels.

16. A schedule adapter for receiving media packets in a first order
and transmitting said media packets in a second order wherein said second
order is selected to reduce distortion with respect to said first order based on
25 estimated channel characteristics.

17. The schedule adapter as described in Claim 16 wherein said media packets are stored prior to transmitting.

5 18. The schedule adapter as described in Claim 16 wherein said second order is determined by an interleaver.

19. The schedule adapter as described in Claim 16 wherein said second order is determined by a packet scheduler, said packet scheduler
10 being computer-readable code, said code programmable to perform as an interleaver.

20. The schedule adapter as described in Claim 16 wherein said schedule adapter is selected from a plurality of schedule adapters.
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21. The schedule adapter of Claim 20 wherein, for each of said plurality of selectable schedule adapters, a corresponding amount of distortion is predicted and one of said plurality of selectable schedule adapters is selected according to said predicted distortion.

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22. The schedule adapter as described in Claim 16 wherein said channel characteristics are estimated from channel characteristics data received from a downstream device.

23. The schedule adapter as described in Claim 22 wherein said downstream device sends, in real-time, said channel characteristics data corresponding to each packet received, back to said system.

5 24. The schedule adapter as described in Claim 22 wherein said downstream device accumulates said channel characteristics data for sending at a predetermined interval.

 25. The schedule adapter of Claim 16 wherein said second order
10 is selected by an interleaver selector.

 26. The schedule adapter of Claim 16 wherein said second order is selected by a switch and wherein said switch transmits said media packets alternately among a plurality of downstream channels.

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 27. The schedule adapter of Claim 16 wherein distortion produced from various of said loss characteristics in combination with various interleaver configurations is predicted and said predicted distortion results are stored as basis for future selecting of said second order for minimizing
20 said distortion.

 28. A channel characteristics estimator configured to receive channel loss data for a downstream channel and estimate loss characteristics of said channel loss data, wherein said loss characteristics
25 are chosen from a group consisting essentially of:

time between losses;

number of isolated packet losses;

number of sequential packet losses;

end-to-end delay for each packet;

5 number of said media packets lost in each of said sequential
packet losses;

packets received/lost pattern; and

time of receipt of each packet..

10 29. A computer-usable medium having computer-readable code
embodied therein for causing a computer system to perform a method of
converting burst losses of media packets in a second order into isolated
losses in relation to a first order of media packets in a media transmission,
comprising:

15 receiving encoded media packets in said first order; and
transmitting said media packets in said second order that is selected
according to loss characteristics of a downstream channel.

30. The computer-usable medium as described in Claim 29
20 wherein said media packets are stored prior to transmitting.

31. The computer-usable medium as described in Claim 29
wherein said second order is determined by a schedule adapter.

32 The computer-usable medium as described in Claim 31
wherein said schedule adapter is an interleaver.

33. The computer-usable medium as described in Claim 31
5 wherein said schedule adapter is a packet scheduler, said packet scheduler
being computer-readable code, said code programmable to perform as an
interleaver.

34. The computer-usable medium as described in Claim 31
10 wherein said schedule adapter is selected from a plurality of schedule
adapters.

35. The computer-usable medium of Claim 34 wherein, for each of
said plurality of selectable schedule adapters, a corresponding amount of
15 distortion is predicted and one of said plurality of selectable schedule
adapters is selected according to said predicted distortion.

36. The computer-usable medium as described in Claim 29
wherein said loss characteristics are estimated from channel characteristics
20 data received from a downstream device.

37. The computer-usable medium as described in Claim 36
wherein said downstream device sends, in real-time, said channel
characteristics data corresponding to each packet received, back to said
25 system.

38. The computer-usable medium as described in Claim 36 wherein said downstream device accumulates said channel characteristics data for sending at a predetermined interval.

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39. The computer-usable medium as described in Claim 36 wherein said loss characteristics are chosen from a group consisting essentially of:

time between losses;

10 number of isolated packet losses;

number of sequential packet losses;

end-to-end delay for each packet;

number of said media packets lost in each of said sequential packet losses;

15 packets received/lost pattern; and

time of receipt of each packet.

40. The computer-usable medium of Claim 39 wherein distortion produced from various of said loss characteristics in combination with various interleaver configurations is predicted and said predicted distortion results are stored as basis for future selecting of said second order for minimizing said distortion.

41. The computer-usable medium of Claim 29 wherein said second order is selected by an interleaver selector.

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42. The computer-usable medium of Claim 29 wherein said second order is selected by a switch and wherein said switch transmits said media packets alternately among a plurality of downstream channels.